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PROJECT NO. 52373

REVIEW OF WHOLESALE ELECTRIC MARKET DESIGN § PUBLIC UTILITY COMMISSION § OF TEXAS

COMMENTS OF SIERRA CLUB

COMES NOW the Lone Star Chapter, Sierra Club and files these Comments in response to the Commission's Request for Comments on Emergency Response Service and the HCAP, as well as a request for more specific comments on specific market redesign proposals. Through these comments, the Sierra Club offers three specific, independent proposals. A one-paragraph executive summary of each proposal is attached at the end of our more general comments.

The Lone Star Chapter of the Sierra Club has nearly 30,000 members throughout Texas most of whom are located in the ERCOT region. We and our members have long advocated at the PUC, ERCOT, legislature and at local utilities and cities for clean energy, demand response and other distributed energy technologies, energy efficiency and adoption of building codes, as ways to reduce energy demand. Energy efficiency is the cheapest, cleanest and quickest way to meet our energy needs. Consumers should have access to and have the option to participate in programs and where appropriate be paid for demand reductions. Customers, particularly those with limited incomes, should also have access to energy efficiency programs and new technologies like customer-sited and community-sited storage and solar resources. We again call on the Commission to have at least one public hearing to get input from any member of the public before making any major changes to the market. The public should not be left in the dark.

Comments in Response to the September 22nd Commissioner McAdams Memo

In the memo, Commissioner McAdams asks the following questions for stakeholder input

16 Texas Administrative Code § 25.505

o Should the high system-wide offer cap be moved away from \$9,000 per MWh?

The high system-wide offer cap should be lowered. The current scarcity price mechanism creates a feast or famine energy market. While high prices can be good to incent new technologies, investment and demand response, it creates too much of a risk on reliability and upon consumers. We would favor lowering the high system-wide

offer cap in the \$3,000 to \$6,000 per MWh range. We do believe that \$4,500 would be a reasonable compromise as the Commissioner has suggested. We do not believe there is a reason to change the low system-wide offer cap.

o Should a specific Value of Lost Load be set by Commission rule and, if so, what should that value be?

We do not have an opinion at this time. We would note that the value of lost load can vary depending greatly upon the customer type. The Commission may want to consider a range of values depending upon customer type, differing residential, commercial and industrial customers.

o Should the frequency of the Resource Adequacy Reports be changed in rule?

Currently, ERCOT is required to produce a Resource Adequacy Report at least once a year, though in practice the CDR now comes out twice a year. We would be in favor of making the report come out twice a year in line with the CDR. We think almost as important, however, is continuing to make progress on incorporating data about distributed generation and demand response into the report to better reflect our changing realities.

16 Texas Administrative Code § 25.507

o Should the Emergency Response Service be procured prior to reaching an Energy Emergency Alert event level?

While we would be in favor of keeping ERS as a service to be used only during energy emergency alert event levels since it is an “out-of-market” solution, there are changes that could be made to create more reliability. Thus, rather than calling some ERS during an EAA 1 and some during EAA 2, we would simply allow ERCOT the option to call both the 10-minute and 30-minute ERS as soon as an EAA 1 is reached if the situation called for it. The Commission could also consider changing the definition of when an EAA is reached such as increasing the current reserve of 2300 MWs to a larger number such as 3000 MWs.

o Should the amount of money available for ERS procurement be increased?

We have long advocated for either removing the cap entirely and allowing the PUC and ERCOT to set an appropriate budget or simply doubling the cap from \$50 million to \$100 million. In addition we favor continuing the allowance of distributed generation and demand response, as well as the aggregation of those resources as being allowed to participate in ERS. There is clearly much more room for growth of weather-related demand response products. Thus growing the amount of ERS from roughly 1,000 MWs to 2,000 or even 3,000 MWs would create a more reliable system.

Market Redesign

The Sierra Club is pleased to offer three proposals as the Commission begins consideration of a market redesign. These proposals are in addition to our suggestions to lower the HCAP and to increase the use of ERS.

Our specific proposals, which are separate and independent, though we believe they work well in tandem, include:

1. **Create an additional Energy Efficiency Savings Goal Requirement for Transmission and Distribution Utilities to meet at least 1 percent of energy use, phased in over four years.** The TDUs would need to continue to current the peak demand goals set in statute, but the creation of a secondary energy savings goal with a specific focus on winter savings would create resiliency in our energy system and could be implemented in a cost-effective manner.
2. **Create a requirement that all load serving entities within ERCOT are obligated to meet five percent of their residential customers' average winter and summer peak use through demand response, including through the use of customer-sited distributed generation, for summer and winter peak.** This obligation could be met through a variety of mechanisms, including through third-party arrangements and through the creation of a statewide trading market. The obligation would be phased in over two years and then reassessed.
3. **Create a daily "peak-ahead" market for two-hour, four-hour and six-hour minimum peaking resources, with needs determined by the likelihood of high or medium variable net-loads during peak periods.** Unlike the Day Ahead market, the "peak-ahead" market would be binding to those making an offer, with penalties if they didn't show up. Only resources able to meet the obligations of the two-hour, four-hour and six-hour services would be allowed to participate. ERCOT would determine the size of the two-hour, four-hour and six-hour market on a daily basis, but only run it as determined by specific criteria. While the mechanics of this new market would still need to be developed, the idea is to offer an opportunity for those resources -- from distributed generation, to demand response, to traditional dispatchable generation, to aggregated resources and to renewable energy plus storage -- to provide a market-based solution to periods when ERCOT expects high net-variability, and use a market mechanism rather than a contracted ancillary service, or to pay extra for what is not needed.

Solution No 1. Increase Energy Efficiency Goals

Recent ERCOT data has shown that well more than half of our peak in the summer and winter occurs because of cooling and heating needs from residential and commercial buildings. Yet, nearly two-thirds of Texas homes were built before a building code was in force in Texas and HVAC and heating systems are often inefficient and not sized correctly for the needs of the building. In fact, homes and buildings with inefficient insulation and outdated electric strip heating in sustained extreme cold drove the February peak. Without addressing energy efficiency, it is highly likely February will be

repeated, as well as high prices and reliability incidences in the hot summer months, even with other market reforms.

Energy efficiency and demand response are proven strategies for meeting our energy needs and saving consumers money, while also avoiding harm to public health. According to Texas A&M's Energy Systems Laboratory, between 2002 and 2019, better HVAC systems and better building code compliance saved consumers \$8.6 billion, while city, school, county and utility efficiency programs saved tens of thousands of additional MWhs.¹ In addition, a recent 2017 study by EPRI found that Texas had an economic potential of 87,500 GWhrs of energy savings by 2035 - about 18.8 percent of expected sales -- a volume of potential electric savings larger than any other state.²

We believe that the Commission should consider opening up a rulemaking to reconsider the way our TDU-required EE programs are operated, by considering an additional energy savings goal of one percent, and more carefully considering both winter and summer peaks. Recent legislative proposals would have significantly expanded both Energy Efficiency and Demand Response, which we believe could be accomplished through rulemaking.

While Texas was the first state to adopt an Energy Efficiency Resource Standard as part of the decision to deregulate the market, today of the 27 states that require an EERS we are last. According to the American Council for an Energy Efficient Economy, nationwide reported savings from utility and public benefits electricity programs in 2019 totaled 26.92 million MWh, equivalent to 0.70% of sales, with fourteen states saving at least 1%. Yet in Texas, efficiency programs offset just 0.19% of sales.

We last raised our EERS goal in 2011, and have a goal that is very focused on summer peak demand -- 0.4 percent of average peak demand. Our TDU programs combine energy efficiency and demand response, but the amount of residential demand response programs through the required EERS are small, and are generally only used as part of an EAA event. Energy efficiency and load management programs operated by TDUs have a 20-year track record of success in Texas. The evaluation, measurement, and verification (EM&V) reports consistently show they deliver value to the market. For example, in 2019, the last year for which data is available, energy efficiency programs have a benefit to cost ratio of 2.7.³ The lifetime cost of the efficiency programs averages **one cent per kWh, which is solely based on the avoided cost of energy**.⁴

¹ Haberl, Jeff; Baltazar, Juan-Carlos; Yazdani, Bahman (2020). Energy Efficiency and Renewable Energy Impacts on NOx Emission Reductions in Texas PPT. Available electronically from <https://hdl.handle.net/1969.1/191217>.

² *State Level Electric Energy Efficiency Potential Estimates*: EPRI, Palo Alto, CA: 2017. 3002009988.

³ *Volume 1. Statewide Energy Efficiency Portfolio Report Program Year 2019*. Page 20.

⁴ *Ibid*, page 16

Despite their consistent proven savings and despite delivering 480MW of demand reduction in 2019, and an average of 445MW/year for the last five years,⁵ **these programs have not been increased since 2011**. The Commission increased them in 2010 *without a legislative mandate to do so* (see Docket No. 37623) (which was later modified slightly in 2011 through passage of SB 1125 to a different metric though the size of the overall goals did not change).

The state needs to put a focus on reducing demand. The energy efficiency programs—for both energy efficiency and load management—is the most straightforward, proven way to do so. Energy efficiency reliably delivers cost savings to customers and demand reduction year round *and* at peak in the case of efficiency programs focused on HVAC and building shell improvements (e.g., insulation), and at peak for dispatchable load management.

Sierra Club suggests adopting an additional one percent savings goal by the end of 2025, beginning with a 0.25 percent goal and raising it by 0.25 percent each year, and putting more emphasis on both the summer and winter peak periods through PUCT rulemaking. Specifically we would eliminate the current energy savings goal which is based on a “conservation load factor” of 20 percent, and replace it with a separate energy savings goal.⁶ The current energy savings goal is tiny, and TDUs have achieved only about 0.2 percent (one-fifth of one percent) of energy savings in Texas as a whole, by far the lowest in the nation of states that have an EERS.

In addition, our current peak demand goal is focused only on summer peak even though statutorily the Commission has been directed to also look at winter peak reduction. We would suggest that the rules be changed to require all utilities to meet both winter and peak reduction goals.

To be clear, programs that were designed to meet the peak demand goal could count toward the energy savings goal, but TDUs would be expected to meet both the peak demand goal and energy savings goal, and recover costs through an EECRF.

Table 1 shows expected results of requiring utilities to meet an annual savings goal of 0.25% in 2022, then doubling the goal every year until they reach one percent.

⁵ *Ibid*, page 16.

⁶ Under 25.181, “An electric utility shall administer a portfolio of energy efficiency programs designed to meet an energy savings goal calculated from its demand savings goal, using a 20% conservation load factor.”

Table 1. Levels of Peak Demand and Energy Savings in EERS, 2019-2025 Under Sierra Club Proposal

| Category | 2019 Peak Demand Achieved | 2019 Savings Achieved | Estimated 2022 0.25% Goal (1) | Estimated 2023 0.50% Goal (1) | Estimated 2024 0.75% Goal (1) | Estimated 2025 1% Goal |
|-----------------|---------------------------|-----------------------|-------------------------------|-------------------------------|-------------------------------|------------------------|
| ERCOT Utilities | 420 MWs | 547 GWhrs | 883 GWhrs | 1,430 GWhrs | 1,957 GWhrs | 2,150 GWhrs |
| Texas Total | 481 MWs | 654 GWhrs | 1,027 GWhrs | 1,635 GWhrs | 2,244 GWhrs | 2,436 GWhrs(2) |

(1) Under our proposal any savings achieved under the Peak Reduction Goal of 0.4 percent could count toward the separate Energy Savings goal. As an example, to get from the current level of energy savings of 654 GWhrs achieved in 2019 statewide, to meet a 2022 goal of 0.25 percent energy savings, utilities would need to design programs that would create a total of 1,027 GWhrs of savings, or an additional 375 GWhrs of savings. Thus well designed demand response programs that lead to savings would help meet the energy savings goal, and similarly programs that save energy and also reduce peak winter and summer demand could count toward the peak demand reduction goals.

(2) We estimate these savings would also lead to an additional 505 MWs within ERCOT and 580 MWs in demand reduction at peak statewide beyond the current levels of peak demand production.

The added obligation on TDSP would not be free. Residential and commercial ratepayers would need to pay for these programs. Because the PUCT already has an existing process to approve an EECRF (Energy Efficiency Cost Recovery Factor), and an existing EMV (Evaluation, Measurement and Valuation) process, we would continue to utilize that process as we have been doing since 2011. We are in favor of continuing to require that every TDSP's programs be evaluated and approved by the Commission with the potential for intervenors, and we would support the establishments of annual cost caps, and the ability for utilities to seek a variance with meeting the goal if they can not meet the goal at a reasonable cost. Table 2 provides some estimates by utility of what it would cost to meet these reasonable goals. Thus, we generally believe that the average cost for a residential customer to meet a one percent goal could be achieved for less than \$5 dollars a month.

Table 2. Estimated Average Residential Costs to Meet 1% Goal

| | 2020 Residential Tariff | 2020 Rate per 1000 KWhrs | 2022 (.25% goal) | 2023 (0.50% goal) | 2024 (.75% goal) | 2025 (1.0 percent goal) |
|----------------|----------------------------|--------------------------------|---------------------|-------------------------|---------------------|-------------------------------|
| ONCOR | 0.000739 | \$0.74 | \$1.61 | \$2.06 | \$3.08 | \$4.10 |
| Centerpoint | 0.000762 | \$0.76 | \$1.44 | \$1.75 | \$2.24 | \$2.98 |
| AEP Central | 0.000932 | \$0.93 | \$2.07 | \$2.55 | \$3.21 | \$4.27 |
| AEP North | 0.000932 | \$0.93 | \$2.14 | \$2.51 | \$2.74 | \$3.64 |
| El Paso | 0.000979 | \$0.98 | \$1.96 | \$2.15 | \$2.39 | \$3.18 |
| SWEPco | 0.001228 | \$1.23 | \$2.34 | \$2.83 | \$4.23 | \$5.63 |
| TNMP | 0.001172 | \$1.17 | \$2.45 | \$2.91 | \$4.34 | \$5.77 |
| XCEL(SPS) | 0.001004 | \$1.00 | \$1.73 | \$2.25 | \$2.57 | \$3.42 |
| Entergy | \$0.000914 | \$0.91 | \$1.73 | \$2.01 | \$2.29 | \$3.05 |

Please note that this analysis makes some assumptions about current energy saving, costs and economies of scale. Thus, these numbers are meant to provide an example alone and are subject to further analysis. The main point is that we believe that ERCOT utilities could achieve these goals for the cost of two cups of coffee for the normal customers and the benefits in terms of reduced energy use, lower bills, a more reliable grid and improved air quality. Reducing our overall energy use on an annual basis through programs that improve summer and energy peak and overall energy will in particular benefit low-income and working Texans and businesses that are looking to control costs in older buildings. Specific programs could be designed to help in particular winter use by replacing strip heating and improving insulation.

Solution No 2: Create a five-percent residential winter and summer peak reduction obligation through distributed resources and demand response on all Load-Serving Entities over two years, and consider a 10-percent residential peak reduction obligation over four years.

Retail electric providers and other load-serving entities like electric cooperatives and retail electric providers can provide demand response but to date have realized only a tiny fraction of the potential that may be available. We believe that the Commission could create an initial two-year five-percent residential summer and winter peak demand reduction goal by creating a trading-program among load serving entities, similar to the

way that the state created a REC program for renewable energy. Thus, these entities would have both a winter and summer obligation. Under our proposal, REPs and other Load-Serving Entities would have maximum flexibility for meeting these goals. Thus, they could utilize TDSP programs to help fund the projects, or fund it themselves. They could contract with third-parties to meet their obligation, or they could purchase credits called “Summer Demand Reduction Energy Credit (SDREC)” or a “Winter Demand Reduction Energy Credit (WDREC).” Thus, similar to the way in which load serving entities previously met Renewable Energy Credits (RECs) to meet Texas initial RPS goals and targets, Texas would create a verifiable, tradeable program.

We would suggest creating a five percent goal over two years, and a 10 percent goal over four years. If the Commission was uncomfortable with setting the more ambitious goals, it could run a two-year program and then reassess. We would define peak reduction broadly such that both “traditional” demand response but also distributed energy resources like solar, EVs, storage and other forms of distributed generation could impact.

Table 3. Winter and Summer Peak Reduction Obligation

| | 2022 Average Peak Reduction Obligation | 2023 Average Peak Reduction Obligation | 2024 Peak Reduction Obligation (1) | 2025 Peak Reduction Obligation (2) |
|---------------|---|---|---|---|
| Winter | 2.5% | 5.0% | 7.5% | 10.0% |
| Summer | 2.5% | 5.0% | 7.5% | 10.0% |

Solution No. 3. Create A Peak-Ahead Daily Market for Two to Six-Hour Dispatchable Resources

During the vast majority of the year, the existing market within ERCOT delivers enough electricity from a variety of resources - variable renewable resources, fossil fuels, load resources and storage -- to meet our needs. Amazingly, even as variable renewable resources have increased and now make up roughly 30 percent of all electricity in ERCOT, we have been able to meet our needs, lower costs to consumers and reduce air emissions of the gases that cause greenhouse gases and create ozone. We must continue this progress.

Nonetheless, as we saw during Winter Storm Uri, sudden changes in climate can lead to both increases in demand, but can also cause both “dispatchable” and renewable resources to not show up as expected. Sudden changes in the weather or drops in pressure, hurricanes and floods can all impact variable resources. As we rightly

incorporate more and more variable resources into our market, we do need to adjust and assure there is a “reliability” mechanism in our market that is nimble and fast.

Thus, we would favor creating a new targeted market mechanism that would include operational and financial commitments. This market would be run in-between the day-ahead market -- which is largely a financial market as well as a market designed to schedule ancillary service deployment -- and the real-time market. We would suggest that this peak-ahead market would be run daily at least three hours before the peak period begins. The peak-ahead market would be limited to days of net-load high variability as determined by ERCOT based on specific criteria. Thus, ERCOT would monitor the weather forecast, overall demand, wind and solar output, and identify any increased potential of high forecast variability that may cause a sudden higher net load during these hours. If certain conditions were met - such as a sudden increase in net load due to a change in demand or the weather that impacts variable renewable energy production -- ERCOT would open up a peak-ahead market. We would suggest that there would be potentially three products -- a two-hour, four-hour and six-hour product to cover the needs during peak and/or post-peak periods. The peak-ahead market would be a daily market that would be used year-round but would be particularly effective during the winter and summer peak periods.

In our proposal, any resource that could meet the parameters of the peak-ahead service in terms of duration could qualify for the market. Thus, both loads, generation and storage would all be eligible to participate in the peak-ahead market, including variable generation that were combined with storage could participate as well.

Conclusion and Executive Summary

The Sierra Club appreciates the opportunity to offer brief comments on questions around HCAP, ERS and also present three new market ideas which are summarized below.

1. Implement a separate Energy Savings Goal of One Percent on Electric Utilities, phased in over four years.

Under existing rules (25.181), electric utilities must run a variety of demand reduction and energy efficiency programs to meet certain peak demand reduction and a conservation load factor of 20 percent. We would suggest eliminating the conservation load factor, implementing a one percent energy savings goal phased in over four years, and assuring that utilities meet both a winter and summer peak reduction goal. The Commission would continue to utilize an annual EECRF, require EMV through a third party, and consider reasonable cost caps. We believe the program could be implemented for less than \$5 dollars per average residential customer through 2025 at a cost less than 2 cents per kilowatt hour over the life of the efficiency measures.

2. Create a winter and summer peak demand reduction load serving entity obligation of 5 percent by 2023 and by 10 percent by 2025

Create an obligation on all load serving entities to reduce summer and winter peak demand by 5 percent by 2023 phased in over two years, and consider a larger 10 percent reduction by 2025. Under our proposal, ERCOT would create both a winter and summer peak demand reduction energy credit, similar to the REC program run by ERCOT. Thus, load serving entities could choose to create their own programs, hire a third-party or purchase credits.

3. Create a new “Peak-Ahead” Market for two-hour, four-hour and six-hour peak periods when certain conditions were determined by ERCOT to necessitate extra resources.

The creation of the new peak-ahead market would be a real commitment that would include three distinct products of two, four and six-hour duration during times of high variability in net-load. ERCOT would establish the criteria and needs based upon load, wind and solar forecasts, and only “call” the market when needed and when high variability existed. Thus it is a very targeted mechanism that would help assure reliability without the need for additional ancillary services. Indeed, this new market would largely replace the need for large amounts of non-spin since the market mechanism would serve the same function. It would be nimble and evolving as demand and the use of variable resources grows in Texas. By creating a two-hour, four-hour and six-hour product it would allow for the growth of demand response, batteries and more traditional dispatchable resources, along with distributed generation.

Respectfully submitted,

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